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REMARKS/ARGUMENTS

Claims 1-3, 5-7, 15-18, 20-23 and 25 are pending in this application. By this Amendment, Applicants amend claims 1 and 15 and cancel claims 4, 8-14, 19 and 24.

Claims 1 and 23 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Zargari (U.S. 6,351,502) in view of Gillig et al. (U.S. 4,989,230). Claim 2 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Zargari in view of Gillig et al., and further in view of the Examiner's official notice. Claim 3 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Zargari in view of Gillig et al., and further in view of Furutani et al. (U.S. 2002/0127973 A1). Claim 4 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Zargari in view of Gillig et al., and further in view of Erickson (U.S. 5,862,466). Claim 5 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Zargari in view of Gillig et al., and further in view of Hiraka et al. (U.S. 6,366,563). Claim 6 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Zargari in view of Gillig et al., and further in view of Kushitani et al. (U.S. 6,496,083). Claim 7 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Zargari in view of Gillig et al., and further in view of Furutani et al. (U.S. 6,100,776). Claims 8 and 24 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Zargari in view of Ke et al. (U.S. 6,658,263). Claim 9 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Zargari in view of Ke et al., and further in view of the Examiner's official notice. Claim 10 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Zargari in view of Ke et al., and further in view of the Examiner's official notice. Claim 11 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Zargari in view of Ke et al., and further in view of Erickson. Claim 12 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Zargari in view of Ke et al., and further in view of Hiraka et al. Claim 13 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Zargari in view of Ke et al., and further in view of Kushitani et al. Claim 14 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Zargari in view of Ke et al., and further in view of Furutani et al. ('776). Claims 15 and 25 were

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rejected under 35 U.S.C. § 103(a) as being unpatentable over Zargari in view of Gillig et al., Ke et al. and Kitazawa et al. (U.S. 6,147,571). Claim 16 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Zargari in view of Gillig et al., Ke et al. and Kitazawa et al., and further in view of Furutani et al. ('776). Claim 17 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Zargari in view of Gillig et al., Ke et al., and Kitazawa et al., and further in view of the Examiner's official notice. Claim 18 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Zargari in view of Gillig et al., Ke et al. and Kitazawa et al., and further in view of Furutani et al. ('973). Claim 19 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Zargari in view of Gillig et al., Ke et al. and Kitazawa et al., and further in view of Erickson. Claim 20 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Zargari in view of Gillig et al., Ke et al. and Kitazawa et al., and further in view of Hiraka et al. Claim 21 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Zargari in view of Gillig et al., Ke et al. and Kitazawa et al., and further in view of Kushitani et al. Claim 22 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Zargari in view of Gillig et al., Ke et al. and Kitazawa et al., and further in view of Furutani et al. ('776). Applicants respectfully traverse these rejections.

Claim 1 has been amended to recite:

"A high-frequency module comprising:

a high-frequency filter arranged to attenuate a spurious high-frequency signal;

a high-frequency switch arranged to switch a transmission signal and a reception signals, wherein the high-frequency switch attenuates the third harmonic of the reception signal;

a transmitter-side balun arranged to convert a balanced signal into an unbalanced signal; and

a receiver-side balun arranged to convert an unbalanced signal into a balanced signal, wherein the receiver-side balun attenuates the second harmonic of the reception signal;

wherein said high-frequency filter is disposed between an antenna and a first terminal of said high-frequency switch, a second terminal of said high-frequency switch is connected to an unbalanced terminal of said

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transmitter-side balun, a third terminal of said high-frequency switch is connected to an unbalanced terminal of said receiver-side balun, and said high-frequency filter is a high-pass filter or a notch filter." (emphasis added)

Claim 15 recites features that are similar to the features recited above, including the above-emphasized features.

With the unique combination and arrangement of elements recited in Applicants' claims 1 and 15, including the features of "a high-frequency filter arranged to attenuate a spurious high-frequency signal," "a high-frequency switch arranged to switch a transmission signal and a reception signals, wherein the high-frequency switch attenuates the third harmonic of the reception signal" and "a receiver-side balun arranged to convert an unbalanced signal into a balanced signal, wherein the receiver-side balun attenuates the second harmonic of the reception signal," Applicants have been able to provide a high-frequency module in which desirable pass band characteristics can be obtained by superimposing the waveforms of the high-frequency filter, the high-frequency switch and the receiver-side balun. Thus, the desirable pass band characteristics are obtained without a band-pass filter. Therefore, the overall insertion loss of the reception side in the high-frequency module is substantially reduced because the insertion loss of the high-frequency filter is substantially less than that of a band-pass filter.

Applicants enclose herewith Figures 1(A)-1(D) and 2(A)-2(D) which illustrate the waveforms of the high-frequency filter, the high-frequency switch, the receiver-side balun, and the pass band characteristics of the high-frequency module obtained by superimposing the waveforms.

Fig. 1(A) shows the waveform of the high-pass filter which passes a reception signal having a prescribed frequency (f_0) or higher, Fig. 1(B) shows a waveform of the high-frequency switch which attenuates the third harmonic having a triple frequency ($3 \times f_0$) of the reception signal, and Fig. 1(C) shows a waveform of the receiver-side

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balun which attenuates the second harmonic having a double frequency ($2 \times f_0$) of the reception signal. Fig. 1(D) shows the superimposed waveform obtained by superimposing the waveforms of the high-pass filter, the high-frequency switch and the receiver-side balun. As clearly seen in Fig. 1(D), desirable pass band characteristics are obtained by superimposing the waveforms of the high-pass filter, the high-frequency switch and the receiver-side balun.

Similarly, as shown in Figs. 2(A)-2(D), the desirable pass band characteristics are obtained without a band-pass filter, by superimposing the waveforms of the notch filter (instead of a high-pass filter), the high-frequency switch and the receiver-side balun.

With respect to claims 3 and 18, the Examiner acknowledged that none of Zargari, Gillig et al. Ke et al. and Kitazawa et al. teaches or suggests a high-frequency switch that attenuates the third harmonic of a reception signal recited in Applicants' claims 1 and 15, as amended.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claim 1 under 35 U.S.C. § 103(a) as being unpatentable over Zargari in view of Gillig et al, and the rejection of claim 15 under 35 U.S.C. § 103(a) as being unpatentable over Zargari in view of Gillig et al., Ke et al. and Kitazawa et al.

With respect to claims 3 and 18, the Examiner alleged that Furutani et al. (US 2002/0127973) teaches a high-frequency switch that attenuates the third harmonic of a reception signal.

Furutani et al. (US 2002/0127973) and the present application are commonly owned, and Furutani et al. qualifies as prior art under 35 U.S.C. § 102(e) and is being used in a rejection under 35 U.S.C. § 103(a). Applicants enclose herewith a Declaration under 37 C.F.R. § 1.130 which indicates that Furutani et al. (US 2002/0127973) and the present application are commonly owned. Accordingly, Applicants respectfully submit that Furutani et al. (US 2002/0127973) is disqualified as prior art in a rejection under 35 U.S.C. § 103(a) in the present application.

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The Examiner relied upon official notice, Erickson, Hiraka et al., Kushitani et al., and Furutani et al. ('776) to allegedly cure various deficiencies of Zargari, Gillig et al. and Ke et al. However, none of official notice, Erickson, Hiraka et al., Kushitani et al., and Furutani et al. ('776), teaches or suggests the features of "a high-frequency filter arranged to attenuate a spurious high-frequency signal," "a high-frequency switch arranged to switch a transmission signal and a reception signals, wherein the high-frequency switch attenuates the third harmonic of the reception signal" and "a receiver-side balun arranged to convert an unbalanced signal into a balanced signal, wherein the receiver-side balun attenuates the second harmonic of the reception signal" as recited in Applicants' claims 1 and 15.

In view of the foregoing amendments and remarks, Applicants respectfully submit that Claims 1 and 15 are allowable. Claims 2, 3, 5-7, 16-18, 20-23 and 25 depend upon claims 1 and 15, and are therefore allowable for at least the reasons that claims 1 and 15 are allowable.

In view of the foregoing amendments and remarks, Applicants respectfully submit that this application is in condition for allowance. Favorable consideration and prompt allowance are solicited.

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The Commissioner is authorized to charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1353.

Respectfully submitted,

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